AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for determining a distance ~~of~~ to an object disposed in an environment, comprising:

transmitting a light pulse to a polymeric light reflector at a first time;

reflecting said light pulse from said reflector;

receiving a portion of said light pulse reflected from said object, said portion being received at a second time; and,

determining a distance of said object based on a time difference between ~~substantially~~ said first and second times.

2. (Original) The method of claim 1 wherein said reflecting step includes:

reflecting said light pulse from a first reflective surface in said reflector to a second reflective surface in said reflector; and,

reflecting said light pulse outwardly from said second reflective surface.

3. (Currently Amended) The method of claim 1 wherein said determining step includes:

generating a received waveform based on said received light pulse;

indicating the object is detected when any portion of said waveform has an amplitude greater than a predetermined threshold at said second time; and,

calculating said distance based on said time difference between ~~substantially~~ said first and second times.

4. (Original) The method of claim 3 wherein said predetermined threshold has a first value at a first elapsed time after said transmission and a second value at a second elapsed time, said second elapsed time being after said first elapsed time, said second value being less than said first value.

5. (Currently Amended) The method of claim 1 wherein said determining step includes:

generating a received waveform based on said received light pulse;

multiplying an amplitude of said received waveform by a gain value to obtain a gain adjusted value; and,

indicating said object is detected when said gain adjusted value is greater than a predetermined threshold at said second time; and,

calculating said distance based on said time difference between ~~substantially~~ said first and second times.

6. (Original) The method of claim 1 wherein said light pulse comprises a near-infrared light pulse.

7. (Currently Amended) A method for determining ~~a~~ distance ~~of~~ from an object, comprising:

transmitting a plurality of light pulses to a polymeric light reflector;

reflecting said light pulses from said reflector;

receiving said light pulses reflected off said object using a light detector;

determining an average travel time of said plurality of pulses; and,

determining a distance of said object based on said average travel time.

8. (Currently Amended) The method of claim 7 wherein said step of determining an average travel time includes:

generating a plurality of received waveforms responsive to said light pulses received by said light detector;

aligning said plurality of received waveforms in a common time interval;

determining an averaged received waveform by averaging ~~said~~ said plurality of received waveforms over said common time interval; and,

calculating said average travel time of said light pulses based on said averaged received waveform.

9. (Currently Amended) The method of claim 7 wherein said plurality of light pulses ~~comprise~~ comprises a plurality of near-infrared light pulses.

10. (Currently Amended) A system for determining a distance ~~of~~ to an object, comprising:

a light source generating a light pulse at a first time;

a polymeric light reflector receiving said light pulse and reflecting said light pulse;

a light detector configured to receive at least a portion of said light pulse reflected off the object, said portion being received at a second time; and,

a controller operably connected to said light source and said light detector, said controller configured to

determine a distance of the object based on a time difference between ~~substantially~~ said first and second times.

11. (Original) The system of claim 10 wherein said light source comprises a near-infrared light source.

12. (Original) The system of claim 10 wherein said polymeric light reflector includes a first and second plurality of reflective facets, said first plurality of reflective facets receiving said light pulse from said light source and reflecting said light pulse to a second plurality of reflective facets that further reflect said light pulse toward the object.

13. (Original) The system of claim 10 wherein said polymeric light reflector includes a transparent portion and a reflective surface, said light pulse moving through said transparent portion to said reflective surface, said surface reflecting said light pulse toward the object.

14. (Original) The system of claim 10 wherein said light detector comprises a near-infrared light detector.

15. (Original) The system of claim 10 wherein said controller is further configured to generate a received waveform based on said received light pulse, said controller being further configured to indicate the object is detected when any portion of said waveform has an amplitude greater than a predetermined threshold at said second time.

16. (Original) The system of claim 15 wherein said predetermined threshold has a first value at a first elapsed time after said transmission and a second value at a second elapsed time, said second elapsed time being after said first elapsed time, said second value being less than said first value.

17. (Original) The system of claim 10 wherein said controller is further configured to generate a received waveform based on said received light pulse, said controller being further configured to multiply an amplitude of said received waveform by a gain value to obtain a gain adjusted value, said controller being further configured to indicate the object is detected when said gain adjusted value is greater than a predetermined threshold at said second time.

18. (Currently Amended) An article of manufacture, comprising:

a computer storage medium having a computer program encoded therein for determining a distance of an object, said computer storage medium comprising:

code for inducing a light source to emit a light pulse at a first time that is reflected by a polymeric light reflector toward an object;

code for storing values indicative of a received portion of said light pulse reflected from the object at a second time; and,

code for calculating a distance of the object from said reflector based on a time difference between ~~substantially~~ said first and second times.

19. (New) The method of claim 1 wherein the time difference is an average time difference.

20. (New) The method of claim 2 wherein the step of reflecting said light pulse from a first reflective surface includes reflecting said light pulse to illuminate a width of a roadway.

21. (New) A method for determining distance to an object disposed in an environment, the method comprising:

transmitting a plurality of light pulses to a polymeric reflector that directs at least a portion of the light pulses to illuminate the environment;

receiving reflected light pulses from the environment;

detecting the object based on elapsed time from transmitting the light pulses and intensity of the reflected light pulses; and

determining distance to the object based on a time difference between transmitting the light pulses and detecting the object.

22. (New) The method of claim 21 wherein the step of detecting comprises comparing a waveform based on the received reflected light pulses to a threshold that decreases as elapsed time increases.

23. (New) The method of claim 22 wherein the threshold decreases in a stepwise manner.

24. (New) The method of claim 21 wherein the step of detecting comprises:

generating a waveform based on the received reflected light pulses and a gain that increases as elapsed time increases; and

comparing the waveform to a constant threshold.

25. (New) The method of claim 21 wherein the step of determining distance comprises determining distance based on an average time difference between transmitting the light pulses and detecting the object.

26. (New) The method of claim 21 wherein the polymeric reflector comprises a transparent thin sheet optical element.